

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>OPP021180KR</b>	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. <b>PCT/KR 2003/002514</b>	International filing date (day/month/year) <b>20 November 2003 (20.11.2003)</b>	(Earliest) Priority Date (day/month/year) <b>20 November 2002 (20.11.2002)</b>
Applicant <b>SAMSUNG ELECTRONICS CO., LTD.</b>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:
  - contained in the international application in written form.
  - filed together with the international application in computer readable form.
  - furnished subsequently to this Authority in written form.
  - furnished subsequently to this Authority in computer readable form.
  - the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
  - the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2.  Certain claims were found unsearchable (See Box I).

3.  Unity of invention is lacking (See Box II).

4. With regard to the title,

- the text is approved as submitted by the applicant.
- the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- the text is approved as submitted by the applicant.
- the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.: 1

- as suggested by the applicant.
- because the applicant failed to suggest a figure.
- because this figure better characterizes the invention.
- None of the figures.

**INTERNATIONAL SEARCH REPORT**

International application No.  
PCT/KR 03/02514-0

**Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)**

A device of driving a liquid crystal display including a plurality of pixels connected to gate lines and data lines and arranged in a matrix is provided. The driving device includes: a gray voltage generator (800) generating a plurality of gray voltages; an image signal modifier (600) receiving first image signals for a pixel row and second image signals for a next pixel row, selecting modified image signal depending on the first image signals and the second image signals, and outputting the modified image signals; and a data driver (500) selecting data voltages from the gray voltages based on the modified image signals from the image signal modifier and applying the data voltages to the pixels.

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/KR 03/02514-0

## CLASSIFICATION OF SUBJECT MATTER

IPC<sup>7</sup>: G09G 3/36, G09G 3/20, G02F 1/133, H04N 5/66

According to International Patent Classification (IPC) or to both national classification and IPC

### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC<sup>7</sup>: G09G, G02F, H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, PAJ, EPODOC, English Fulltext

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,A	US 2003/0058211 A1 (KIM et.al.) 27 March 2003 (27.03.2003) <i>the whole document.</i>	1-12
P,A	US 2003/0151579 A1 (LEE) 14 August 2003 (14.08.2003) <i>the whole document.</i>	1-12
A	US 6359389 B1 (EVANICKY et.al.) 19 March 2002 (19.03.2002) <i>the whole document.</i>	1-12
A	US 6429841 B (LEE) 6 August 2002 (06.08.2002) <i>the whole document.</i>	1-12
A	KR 2002 017318 A (SAMSUNG ELECTRONICS CO LTD) 7 March 2002 (07.03.2002) <i>the whole document.</i>	1-12
A	EP 1122711 A (SAMSUNG ELECTRONICS CO LTD) 8 August 2001 (08.08.2001) <i>the whole document.</i>	1-12

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents: „A“ document defining the general state of the art which is not considered to be of particular relevance „E“ earlier application or patent but published on or after the international filing date „L“ document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) „O“ document referring to an oral disclosure, use, exhibition or other means „P“ document published prior to the international filing date but later than the priority date claimed	„T“ later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention „X“ document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone „Y“ document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art „&“ document member of the same patent family
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Date of the actual completion of the international search  
18 May 2004 (18.05.2004)

Date of mailing of the international search report  
23 June 2004 (23.06.2004)

Name and mailing address of the ISA/AT  
Austrian Patent Office  
Dresdner Straße 87, A-1200 Vienna  
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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR 03/02514-0

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 09 090910 A (MATSUSHITA DENKI SANGYO KK) 4 April 1997 (04.04.1997) <i>the whole document.</i> ----	1-12

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.  
**PCT/KR 03/02514-0**

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP	A	1122711	TW	B	516011 2003-01-01
			KR	A	2002044672 2002-06-19
			KR	A	2002010216 2002-02-04
			KR	A	2001077568 2001-08-20
			US	A	2001038372 2001-11-08
			JP	A	2001265298 2001-09-28
JP	A	910A2			none
KR	A	20020173	2002-03-07		none
		18			
US	A	20030058			none
		211			
US	A	20030151			none
		579			
US	B	6359389	2002-03-19		none
US	B	6429841	2002-08-06	KR	A 2000013602 2000-03-06